



Project: Eddy County, NM
 Site: SEC 12 T18S R26E
 Well: Brainard 12-2H
 Wellbore: Original Wellbore
 Design: Plan 5

Reference Details

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Latitude: 32° 45' 34.287 N
 Longitude: 104° 20' 20.113 W
 Ground Elevation: 3295.5
 KB Elevation: KB @ 3313.0usft

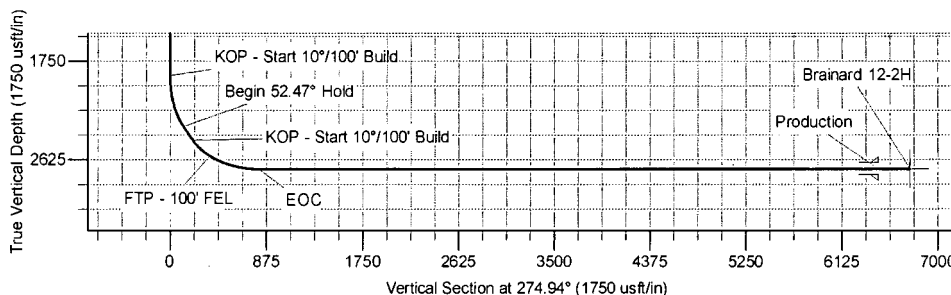
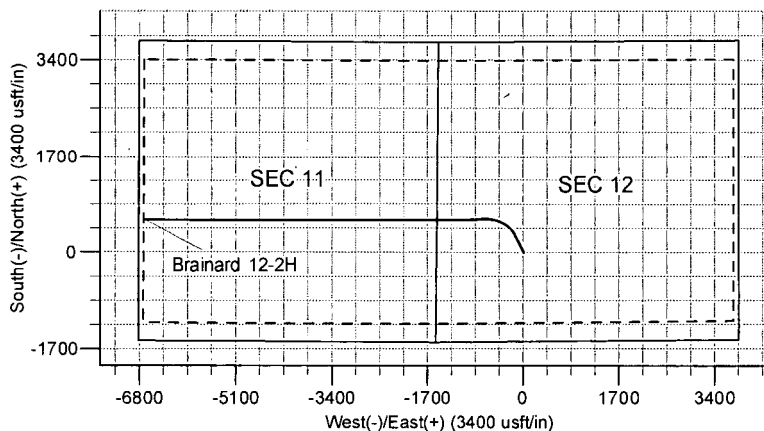
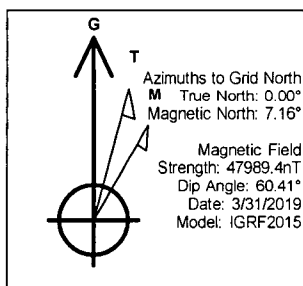
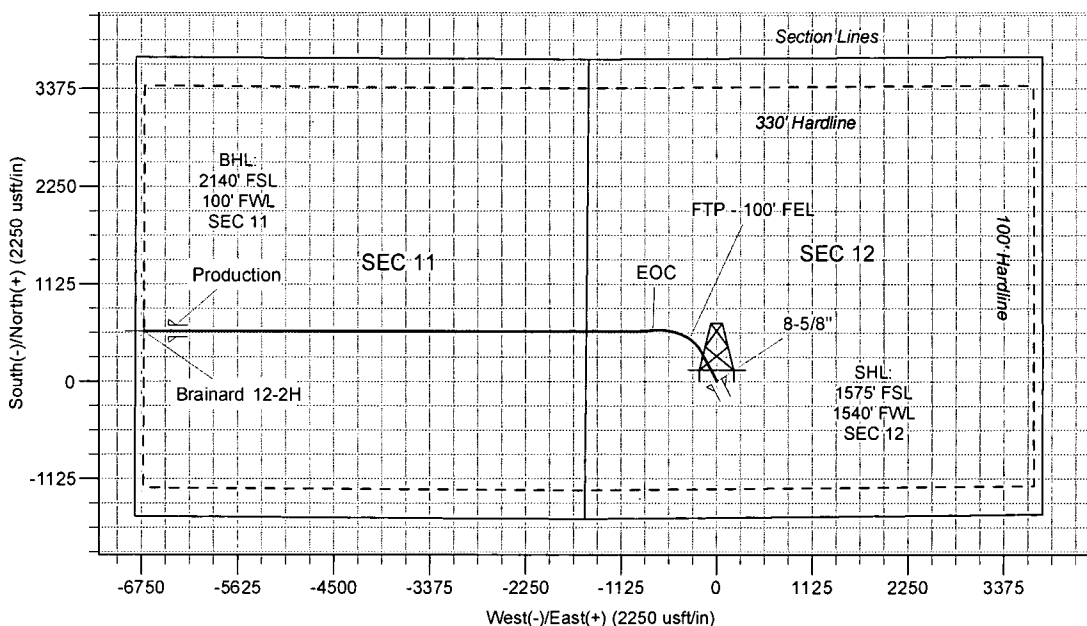


RPM Consulting, Inc.
 1600 Broadway, Suite 1510
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 303-595-7625

SECTION DETAILS

CASING DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	TVD	MD	Name	Size
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	1230.0	1230.0	Surface	8-5/8
1874.8	0.00	0.00	1874.8	0.0	0.0	0.00	0.00	0.0	2705.0	9000.0	Production	5-1/2
2399.5	52.47	332.00	2329.2	197.7	-105.1	10.00	332.00	121.8				
2599.5	52.47	332.00	2451.0	337.8	-179.6	0.00	0.00	208.0				
3320.3	90.00	264.82	2705.0	592.1	-750.0	10.00	-75.62	798.2				
3579.1	90.00	270.00	2705.0	580.4	-1008.4	2.00	90.00	1054.7				
9289.8	90.00	270.00	2705.0	580.4	-6719.2	0.00	0.00	6744.2				



Planning Report

Database:	EDM Server Database	Local Co-ordinate Reference:	Well Brainard 12-2H
Company:	Lime Rock Resources	TVD Reference:	KB @ 3313.0usft
Project:	Eddy County, NM	MD Reference:	KB @ 3313.0usft
Site:	SEC 12 T18S R26E	North Reference:	Grid
Well:	Brainard 12-2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 5		

Project	Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		SEC 12 T18S R26E			
Site Position:		Northing:	638,920.77 usft	Latitude:	32° 45' 23.143 N
From:	Lat/Long	Easting:	538,424.28 usft	Longitude:	104° 20' 34.115 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.01°

Well	Brainard 12-2H					
Well Position	+N/-S	1,126.1 usft	Northing:	640,046.83 usft	Latitude:	32° 45' 34.287 N
	+E/-W	1,195.7 usft	Easting:	539,620.01 usft	Longitude:	104° 20' 20.113 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	Ground Level:		3,295.5 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	3/31/2019	7.16	60.41	47,989.35239247

Design	Plan 5				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	274.94	

Plan Survey Tool Program	Date 5/23/2019				
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks	
(usft)	(usft)				
1	0.0	9,289.8 Plan 5 (Original Wellbore)	MWD		
			OWSG MWD - Standard		

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,874.8	0.00	0.00	1,874.8	0.0	0.0	0.00	0.00	0.00	0.00	
2,399.5	52.47	332.00	2,329.2	197.7	-105.1	10.00	10.00	0.00	332.00	
2,599.5	52.47	332.00	2,451.0	337.8	-179.6	0.00	0.00	0.00	0.00	
3,320.3	90.00	264.82	2,705.0	592.1	-750.0	10.00	5.21	-9.32	-75.62	
3,579.1	90.00	270.00	2,705.0	580.4	-1,008.4	2.00	0.00	2.00	90.00	
9,289.8	90.00	270.00	2,705.0	580.4	-6,719.2	0.00	0.00	0.00	0.00	Brainard 12-2H

Planning Report

Database:	EDM Server Database	Local Co-ordinate Reference:	Well Brainard 12-2H
Company:	Lime Rock Resources	TVD Reference:	KB @ 3313.0usft
Project:	Eddy County, NM	MD Reference:	KB @ 3313.0usft
Site:	SEC 12 T18S R26E	North Reference:	Grid
Well:	Brainard 12-2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,230.0	0.00	0.00	1,230.0	0.0	0.0	0.0	0.00	0.00	0.00	
8-5/8" - Surface										
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,874.8	0.00	0.00	1,874.8	0.0	0.0	0.0	0.00	0.00	0.00	
KOP - Start 10°/100' Build										
1,900.0	2.52	332.00	1,900.0	0.5	-0.3	0.3	10.00	10.00	0.00	
2,000.0	12.52	332.00	1,999.0	12.0	-6.4	7.4	10.00	10.00	0.00	
2,100.0	22.52	332.00	2,094.2	38.6	-20.5	23.8	10.00	10.00	0.00	
2,200.0	32.52	332.00	2,182.8	79.3	-42.2	48.8	10.00	10.00	0.00	
2,300.0	42.52	332.00	2,262.0	133.0	-70.7	81.9	10.00	10.00	0.00	
2,399.5	52.47	332.00	2,329.2	197.7	-105.1	121.8	10.00	10.00	0.00	
Begin 52.47° Hold										
2,400.0	52.47	332.00	2,329.5	198.1	-105.3	122.0	0.00	0.00	0.00	
2,500.0	52.47	332.00	2,390.4	268.1	-142.5	165.1	0.00	0.00	0.00	
2,599.5	52.47	332.00	2,451.0	337.8	-179.6	208.0	0.00	0.00	0.00	
KOP - Start 10°/100' Build										
2,600.0	52.48	331.94	2,451.3	338.1	-179.8	208.2	10.00	2.49	-12.21	
2,700.0	55.57	320.17	2,510.2	404.9	-225.0	259.0	10.00	3.08	-11.77	
2,800.0	59.69	309.38	2,563.8	464.1	-284.9	323.8	10.00	4.12	-10.80	
2,850.5	62.09	304.29	2,588.4	490.6	-320.2	361.2	10.00	4.76	-10.07	
FTP - 100' FEL										
2,900.0	64.62	299.53	2,610.6	513.9	-357.7	400.6	10.00	5.11	-9.62	
3,000.0	70.15	290.50	2,649.1	552.7	-441.3	487.2	10.00	5.53	-9.03	
3,100.0	76.10	282.09	2,678.2	579.5	-533.1	580.9	10.00	5.95	-8.40	
3,200.0	82.33	274.12	2,696.9	593.2	-630.2	678.9	10.00	6.23	-7.97	
3,300.0	88.70	266.39	2,704.8	593.6	-729.8	778.1	10.00	6.37	-7.74	
3,320.3	90.00	264.83	2,705.0	592.1	-750.0	798.2	10.00	6.40	-7.68	
EOC										
3,400.0	90.00	266.42	2,705.0	586.0	-829.5	876.8	2.00	0.00	2.00	
3,500.0	90.00	268.42	2,705.0	581.5	-929.3	975.9	2.00	0.00	2.00	
3,579.1	90.00	270.00	2,705.0	580.4	-1,008.4	1,054.7	2.00	0.00	2.00	
3,600.0	90.00	270.00	2,705.0	580.4	-1,029.3	1,075.5	0.00	0.00	0.00	
3,700.0	90.00	270.00	2,705.0	580.4	-1,129.3	1,175.1	0.00	0.00	0.00	
3,800.0	90.00	270.00	2,705.0	580.4	-1,229.3	1,274.7	0.00	0.00	0.00	
3,900.0	90.00	270.00	2,705.0	580.4	-1,329.3	1,374.4	0.00	0.00	0.00	

Planning Report

Database:	EDM Server Database	Local Co-ordinate Reference:	Well Brainard 12-2H
Company:	Lime Rock Resources	TVD Reference:	KB @ 3313.0usft
Project:	Eddy County, NM	MD Reference:	KB @ 3313.0usft
Site:	SEC 12 T18S R26E	North Reference:	Grid
Well:	Brainard 12-2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,000.0	90.00	270.00	2,705.0	580.4	-1,429.3	1,474.0	0.00	0.00	0.00
4,100.0	90.00	270.00	2,705.0	580.4	-1,529.3	1,573.6	0.00	0.00	0.00
4,200.0	90.00	270.00	2,705.0	580.4	-1,629.3	1,673.2	0.00	0.00	0.00
4,300.0	90.00	270.00	2,705.0	580.4	-1,729.3	1,772.9	0.00	0.00	0.00
4,400.0	90.00	270.00	2,705.0	580.4	-1,829.3	1,872.5	0.00	0.00	0.00
4,500.0	90.00	270.00	2,705.0	580.4	-1,929.3	1,972.1	0.00	0.00	0.00
4,600.0	90.00	270.00	2,705.0	580.4	-2,029.3	2,071.8	0.00	0.00	0.00
4,700.0	90.00	270.00	2,705.0	580.4	-2,129.3	2,171.4	0.00	0.00	0.00
4,800.0	90.00	270.00	2,705.0	580.4	-2,229.3	2,271.0	0.00	0.00	0.00
4,900.0	90.00	270.00	2,705.0	580.4	-2,329.3	2,370.6	0.00	0.00	0.00
5,000.0	90.00	270.00	2,705.0	580.4	-2,429.3	2,470.3	0.00	0.00	0.00
5,100.0	90.00	270.00	2,705.0	580.4	-2,529.3	2,569.9	0.00	0.00	0.00
5,200.0	90.00	270.00	2,705.0	580.4	-2,629.3	2,669.5	0.00	0.00	0.00
5,300.0	90.00	270.00	2,705.0	580.4	-2,729.3	2,769.2	0.00	0.00	0.00
5,400.0	90.00	270.00	2,705.0	580.4	-2,829.3	2,868.8	0.00	0.00	0.00
5,500.0	90.00	270.00	2,705.0	580.4	-2,929.3	2,968.4	0.00	0.00	0.00
5,600.0	90.00	270.00	2,705.0	580.4	-3,029.3	3,068.1	0.00	0.00	0.00
5,700.0	90.00	270.00	2,705.0	580.4	-3,129.3	3,167.7	0.00	0.00	0.00
5,800.0	90.00	270.00	2,705.0	580.4	-3,229.3	3,267.3	0.00	0.00	0.00
5,900.0	90.00	270.00	2,705.0	580.4	-3,329.3	3,366.9	0.00	0.00	0.00
6,000.0	90.00	270.00	2,705.0	580.4	-3,429.3	3,466.6	0.00	0.00	0.00
6,100.0	90.00	270.00	2,705.0	580.4	-3,529.3	3,566.2	0.00	0.00	0.00
6,200.0	90.00	270.00	2,705.0	580.4	-3,629.3	3,665.8	0.00	0.00	0.00
6,300.0	90.00	270.00	2,705.0	580.4	-3,729.3	3,765.5	0.00	0.00	0.00
6,400.0	90.00	270.00	2,705.0	580.4	-3,829.3	3,865.1	0.00	0.00	0.00
6,500.0	90.00	270.00	2,705.0	580.4	-3,929.3	3,964.7	0.00	0.00	0.00
6,600.0	90.00	270.00	2,705.0	580.4	-4,029.3	4,064.3	0.00	0.00	0.00
6,700.0	90.00	270.00	2,705.0	580.4	-4,129.3	4,164.0	0.00	0.00	0.00
6,800.0	90.00	270.00	2,705.0	580.4	-4,229.3	4,263.6	0.00	0.00	0.00
6,900.0	90.00	270.00	2,705.0	580.4	-4,329.3	4,363.2	0.00	0.00	0.00
7,000.0	90.00	270.00	2,705.0	580.4	-4,429.3	4,462.9	0.00	0.00	0.00
7,100.0	90.00	270.00	2,705.0	580.4	-4,529.3	4,562.5	0.00	0.00	0.00
7,200.0	90.00	270.00	2,705.0	580.4	-4,629.3	4,662.1	0.00	0.00	0.00
7,300.0	90.00	270.00	2,705.0	580.4	-4,729.3	4,761.7	0.00	0.00	0.00
7,400.0	90.00	270.00	2,705.0	580.4	-4,829.3	4,861.4	0.00	0.00	0.00
7,500.0	90.00	270.00	2,705.0	580.4	-4,929.3	4,961.0	0.00	0.00	0.00
7,600.0	90.00	270.00	2,705.0	580.4	-5,029.3	5,060.6	0.00	0.00	0.00
7,700.0	90.00	270.00	2,705.0	580.4	-5,129.3	5,160.3	0.00	0.00	0.00
7,800.0	90.00	270.00	2,705.0	580.4	-5,229.3	5,259.9	0.00	0.00	0.00
7,900.0	90.00	270.00	2,705.0	580.4	-5,329.3	5,359.5	0.00	0.00	0.00
8,000.0	90.00	270.00	2,705.0	580.4	-5,429.3	5,459.1	0.00	0.00	0.00
8,100.0	90.00	270.00	2,705.0	580.4	-5,529.3	5,558.8	0.00	0.00	0.00
8,200.0	90.00	270.00	2,705.0	580.4	-5,629.3	5,658.4	0.00	0.00	0.00
8,300.0	90.00	270.00	2,705.0	580.4	-5,729.3	5,758.0	0.00	0.00	0.00
8,400.0	90.00	270.00	2,705.0	580.4	-5,829.3	5,857.7	0.00	0.00	0.00
8,500.0	90.00	270.00	2,705.0	580.4	-5,929.3	5,957.3	0.00	0.00	0.00
8,600.0	90.00	270.00	2,705.0	580.4	-6,029.3	6,056.9	0.00	0.00	0.00
8,700.0	90.00	270.00	2,705.0	580.4	-6,129.3	6,156.5	0.00	0.00	0.00
8,800.0	90.00	270.00	2,705.0	580.4	-6,229.3	6,256.2	0.00	0.00	0.00
8,900.0	90.00	270.00	2,705.0	580.4	-6,329.3	6,355.8	0.00	0.00	0.00
9,000.0	90.00	270.00	2,705.0	580.4	-6,429.3	6,455.4	0.00	0.00	0.00
Production									
9,100.0	90.00	270.00	2,705.0	580.4	-6,529.3	6,555.1	0.00	0.00	0.00
9,200.0	90.00	270.00	2,705.0	580.4	-6,629.3	6,654.7	0.00	0.00	0.00

Planning Report

Database:	EDM Server Database	Local Co-ordinate Reference:	Well Brainard 12-2H
Company:	Lime Rock Resources	TVD Reference:	KB @ 3313.0usft
Project:	Eddy County, NM	MD Reference:	KB @ 3313.0usft
Site:	SEC 12 T18S R26E	North Reference:	Grid
Well:	Brainard 12-2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,289.8	90.00	270.00	2,705.0	580.4	-6,719.1	6,744.2	0.00	0.00	0.00
PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Brainard 12-2H	0.00	360.00	2,705.0	580.4	-6,719.2	640,627.24	532,900.86	32° 45' 40.020 N	104° 21' 38.803 W
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,230.0	1,230.0	Surface	8-5/8	8-5/8	
9,000.0	2,705.0	Production	5-1/2	5-1/2	

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,230.0	1,230.0	0.0	0.0	8-5/8"
1,874.8	1,874.8	0.0	0.0	KOP - Start 10°/100' Build
2,399.5	2,329.2	197.7	-105.1	Begin 52.47° Hold
2,599.5	2,451.0	337.8	-179.6	KOP - Start 10°/100' Build
2,850.5	2,588.4	490.6	-320.2	FTP - 100' FEL
3,320.3	2,705.0	592.1	-750.0	EOC
9,289.8	2,705.0	580.4	-6,719.1	PBHL